

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of the claims in the application:

Sub B17
1. (Currently Amended) A method for identifying a phase of an incoming ultra wide bandwidth UWB signal at an ultra wide bandwidth a UWB receiver, comprising the steps of:
receiving incoming pulses of the incoming ultra wide bandwidth UWB signal, adjacent pulses of said incoming pulses arriving at a fixed predetermined interval;
generating local pulses at the ultra wide bandwidth UWB receiver;
correlating the local pulses with the incoming pulses to produce a correlation function;
and
determining a maximum of the correlation function.

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2. (Currently Amended) A method of claim 1, wherein the fixed predetermined interval is the time between the incoming pulses.

3. (Original) A method of claim 1, wherein the incoming pulses are at least one of bi-phase modulated, and quadrature phase modulated.

Sub B17
4. (Original) A method of claim 3, wherein the incoming pulses are multilevel pulses.

5. (Original) A method of claim 1, wherein the step of correlating the incoming pulses with the local pulses to produce a correlation function comprises:
shifting a phase of the local pulses; and

calculating a correlation value of the local pulses and the incoming pulses.

6. (Original) A method of claim 5, wherein the correlation value comprises the correlation function.

7. (Original) A method of claim 1, wherein the step of determining a maximum of the correlation function comprises:

finding a first maximum;

analyzing the correlation function to find a second maximum that exceeds the first maximum; and

searching a region around the second maximum to determine if the second maximum is a true maximum.

114
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8. (Currently Amended) A system for identifying a phase of an incoming ultra wide bandwidth UWB signal at an ultra wide bandwidth a-UWB receiver, comprising:

an antenna configured to receive incoming pulses of the ultra wide bandwidth UWB signal, adjacent pulses of said incoming pulses occurring at a fixed ~~predetermined~~ interval;

a signal generator configured to generate local pulses;

a correlator configured to correlate the incoming pulses with the local pulses to produce a correlation function; and

a detector configured to determine a maximum of the correlation function.

9. (Currently Amended) A system of claim 8, wherein the fixed ~~predetermined~~ interval is a distance between the incoming pulses in time.

10. (Original) A system of claim 8, wherein the incoming pulses are at least one of bi-phase modulated, and quadrature ~~phase~~ modulated.

sub 317 11. (Original) A system of claim 10, wherein the incoming pulses are multilevel pulses..

12. (Original) A system of claim 8, wherein the correlator comprises:
a phase adjuster configured to adjust a phase of the local pulses; and
a calculator configured to calculate a correlation value of the local pulse and the incoming pulse.

13. (Original) A system of claim 12, wherein a plurality of the correlation value comprises the correlation function.

14. (Original) A system of claim 8, wherein the detector comprises:
a location mechanism configured to find a first peak;
a correlation analysis mechanism configured to analyze the correlation function in order to find a second maximum to exceed the first maximum; and
a search mechanism configured to search an area around the second maximum to determine if the second maximum is the true maximum.

15. (Currently Amended) A system for identifying a phase of an incoming ultrawide bandwidth UWB signal at an ultra wide bandwidth a-UWB receiver, comprising:

means for receiving incoming pulses of the incoming ultra wide bandwidth UWB signal, and adjacent pulses of said incoming pulses arriving at a fixed ~~predetermined~~ interval;

means for generating local pulses at the ultra wide bandwidth UWB receiver;

means for correlating the local pulses with the incoming pulses to produce a correlation function; and

means for determining a maximum of the correlation function to determine when correlation is achieved.

16. (New) A method of claim 1, wherein the local pulses are generated at the fixed interval, but at a variable phase with respect to the incoming pulses.

17. (New) A system of claim 8, wherein the local pulses generated by the signal generator are generated at the fixed interval but at a variable phase with respect to the incoming pulses.

74
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